

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10/071, 751 B
Source: IFW16
Date Processed by STIC: 03/29/2007

ENTERED



IFW16

RAW SEQUENCE LISTING

DATE: 03/29/2007

PATENT APPLICATION: US/10/071,751B

TIME: 15:18:50

Input Set : N:\efs\03_21_07\10071751b_efs\pto.da.txt

Output Set: N:\CRF4\03292007\J071751B.raw

SEQUENCE LISTING

3 (1) GENERAL INFORMATION:

5 (i) APPLICANT: Frank, Glenn R.

6 Wu Hunter, Shirley

7 Wallenfels, Lynda

9 (ii) TITLE OF INVENTION: NOVEL ECTOPARASITE SALIVA PROTEINS AND

10 APPARATUS TO COLLECT SUCH PROTEINS

12 (iii) NUMBER OF SEQUENCES: 88

14 (iv) CORRESPONDENCE ADDRESS:

15 (A) ADDRESSEE: SHERIDAN ROSS P.C.

16 (B) STREET: 1700 LINCOLN ST., SUITE 3500

17 (C) CITY: DENVER

18 (D) STATE: CO

19 (E) COUNTRY: U.S.A.

20 (F) ZIP: 80203

22 (v) COMPUTER READABLE FORM:

23 (A) MEDIUM TYPE: Floppy disk

24 (B) COMPUTER: IBM PC compatible

25 (C) OPERATING SYSTEM: PC-DOS/MS-DOS

26 (D) SOFTWARE: PatentIn Release #1.0, Version #1.30

28 (vi) CURRENT APPLICATION DATA:

C--> 29 (A) APPLICATION NUMBER: US/10/071,751B

C--> 30 (B) FILING DATE: 02-Jul-2002

31 (C) CLASSIFICATION:

33 (viii) ATTORNEY/AGENT INFORMATION:

34 (A) NAME: Connell, Gary J.

35 (B) REGISTRATION NUMBER: 32,020

36 (C) REFERENCE/DOCKET NUMBER: 2618-17-C4

38 (ix) TELECOMMUNICATION INFORMATION:

39 (A) TELEPHONE: 303/863-9700

40 (B) TELEFAX: 303/863-0223

46 (2) INFORMATION FOR SEQ ID NO: 1:

48 (i) SEQUENCE CHARACTERISTICS:

49 (A) LENGTH: 26 amino acids

50 (B) TYPE: amino acid

51 (C) STRANDEDNESS:

52 (D) TOPOLOGY: linear

54 (ii) MOLECULE TYPE: protein

56 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

58 Met Arg Gly Asn His Val Phe Leu Glu Asp Gly Met Ala Asp Met Thr

59 1 5 10 15

61 Gly Gly Gln Gln Met Gly Arg Asp Leu Tyr

62 20 25

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66 (2) INFORMATION FOR SEQ ID NO: 2:
68   (i) SEQUENCE CHARACTERISTICS:
69       (A) LENGTH: 12 amino acids
70       (B) TYPE: amino acid
71       (C) STRANDEDNESS:
72       (D) TOPOLOGY: linear
74   (ii) MOLECULE TYPE: protein
76   (ix) FEATURE:
77       (A) NAME/KEY: Xaa = Tyr or Asp
78       (B) LOCATION: 5
80   (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
W--> 82   Lys Tyr Arg Asn Xaa Xaa Thr Asn Asp Pro Gln Tyr
83       1         5             10
86 (2) INFORMATION FOR SEQ ID NO: 3:
88   (i) SEQUENCE CHARACTERISTICS:
89       (A) LENGTH: 27 amino acids
90       (B) TYPE: amino acid
91       (C) STRANDEDNESS:
92       (D) TOPOLOGY: linear
94   (ii) MOLECULE TYPE: protein
96   (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
98       Glu Ile Lys Arg Asn Asp Arg Glu Pro Gly Asn Leu Ser Lys Ile Arg
99       1         5             10             15
101      Thr Val Met Asp Lys Val Ile Lys Gln Thr Gln
102          20             25
110 (2) INFORMATION FOR SEQ ID NO: 4:
112   (i) SEQUENCE CHARACTERISTICS:
113       (A) LENGTH: 23 amino acids
114       (B) TYPE: amino acid
115       (C) STRANDEDNESS:
116       (D) TOPOLOGY: linear
118   (ii) MOLECULE TYPE: protein
120   (ix) FEATURE:
121       (A) NAME/KEY: Xaa = Ala or His
122       (B) LOCATION: 8
124   (ix) FEATURE:
125       (A) NAME/KEY: Xaa = Ala or His
126       (B) LOCATION: 9
129   (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
W--> 131   Leu Lys Asp Asn Asp Ile Tyr Xaa Xaa Arg Asp Ile Asn Glu Ile Leu
132       1         5             10             15
134   Arg Val Leu Asp Pro Ser Lys
135          20
138 (2) INFORMATION FOR SEQ ID NO: 5:
140   (i) SEQUENCE CHARACTERISTICS:
141       (A) LENGTH: 27 amino acids
142       (B) TYPE: amino acid
143       (C) STRANDEDNESS:
144       (D) TOPOLOGY: linear

```

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Output Set: N:\CRF4\03292007\J071751B.raw

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146      (ii) MOLECULE TYPE: protein
148      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
W--> 150      Asn Tyr Gly Arg Val Gln Ile Glu Asp Tyr Thr Xaa Ser Asn His Lys
151          1             5             10             15
W--> 153      Asp Xaa Glu Glu Lys Asp Gln Ile Asn Gly Leu
154          20             25
157 (2) INFORMATION FOR SEQ ID NO: 6:
159      (i) SEQUENCE CHARACTERISTICS:
160          (A) LENGTH: 18 amino acids
161          (B) TYPE: amino acid
162          (C) STRANDEDNESS:
163          (D) TOPOLOGY: linear
165      (ii) MOLECULE TYPE: protein
167      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
W--> 169      Lys Tyr Arg Asn Xaa Tyr Thr Asn Asp Pro Gln Leu Lys Leu Leu Asp
170          1             5             10             15
172      Glu Gly
175 (2) INFORMATION FOR SEQ ID NO: 7:
177      (i) SEQUENCE CHARACTERISTICS:
178          (A) LENGTH: 22 amino acids
179          (B) TYPE: amino acid
180          (C) STRANDEDNESS:
181          (D) TOPOLOGY: linear
183      (ii) MOLECULE TYPE: protein
185      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
W--> 187      Tyr Phe Asn Asp Gln Ile Lys Ser Val Met Glu Pro Xaa Val Phe Lys
188          1             5             10             15
W--> 190      Tyr Pro Xaa Ala Xaa Leu
191          20
194 (2) INFORMATION FOR SEQ ID NO: 8:
196      (i) SEQUENCE CHARACTERISTICS:
197          (A) LENGTH: 20 base pairs
198          (B) TYPE: nucleic acid
199          (C) STRANDEDNESS: single
200          (D) TOPOLOGY: linear
202      (ii) MOLECULE TYPE: DNA (genomic)
204      (ix) FEATURE:
205          (A) NAME/KEY: misc_feature
206          (B) LOCATION: 1..20
207          (D) OTHER INFORMATION: /label= primer
209      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
211      TGRTTTCCWA TRAARTCTTC
214 (2) INFORMATION FOR SEQ ID NO: 9:
216      (i) SEQUENCE CHARACTERISTICS:
217          (A) LENGTH: 225 base pairs
218          (B) TYPE: nucleic acid
219          (C) STRANDEDNESS: single
220          (D) TOPOLOGY: linear
222      (ii) MOLECULE TYPE: DNA (genomic)

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224 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
226 GAATTCGGCA CGAGTGAAAT TCAATATTTT GTTTTACATT AAATTTTTC AATTCGATAT 60
228 GAAATTTTCTA CTGGCAATTT GCGTGTGTGTG TGTTTTATTA AATCAAGTAT CTATGTCAAA 120
230 AATGGTCACT GAAAAGTGTA AGTCAGGTGG AAATAATCCA AGTACAGAAG AGGTGTCAAT 180
232 ACCATCTGGG AAGCTTACTA TTGAAGATTT TTGTATTGGA AATCA 225
239 (2) INFORMATION FOR SEQ ID NO: 10:
241 (i) SEQUENCE CHARACTERISTICS:
242 (A) LENGTH: 15 base pairs
243 (B) TYPE: nucleic acid
244 (C) STRANDEDNESS: single
245 (D) TOPOLOGY: linear
247 (ii) MOLECULE TYPE: DNA (genomic)
249 (ix) FEATURE:
250 (A) NAME/KEY: misc_feature
251 (B) LOCATION: 1..15
252 (D) OTHER INFORMATION: /label= primer
254 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
256 AATTCGGCAC GAGTG 15
259 (2) INFORMATION FOR SEQ ID NO: 11:
261 (i) SEQUENCE CHARACTERISTICS:
262 (A) LENGTH: 565 base pairs
263 (B) TYPE: nucleic acid
264 (C) STRANDEDNESS: single
265 (D) TOPOLOGY: linear
267 (ii) MOLECULE TYPE: cDNA
269 (ix) FEATURE:
270 (A) NAME/KEY: CDS
271 (B) LOCATION: 45..314
274 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
276 TGAAATTCAA TATTTTGT TT TACATTAAAT TTTTCAAATT CGAT ATG AAA TTT TTA 56
277 Met Lys Phe Leu
278 1
280 CTG GCA ATT TGC GTG TTG TGT GTT TTA TTA AAT CAA GTA TCT ATG TCA 104
281 Leu Ala Ile Cys Val Leu Cys Val Leu Leu Asn Gln Val Ser Met Ser
282 5 10 15 20
284 AAA ATG GTC ACT GAA AAG TGT AAG TCA GGT GGA AAT AAT CCA AGT ACA 152
285 Lys Met Val Thr Glu Lys Cys Lys Ser Gly Gly Asn Asn Pro Ser Thr
286 25 30 35
288 GAA GAG GTG TCA ATA CCA TCT GGG AAG CTT ACT ATT GAA GAT TTT TGT 200
289 Glu Glu Val Ser Ile Pro Ser Gly Lys Leu Thr Ile Glu Asp Phe Cys
290 40 45 50
292 ATT GGA AAT CAT CAA AGT TGC AAA ATA TTT TAC AAA AGT CAA TGT GGA 248
293 Ile Gly Asn His Gln Ser Cys Lys Ile Phe Tyr Lys Ser Gln Cys Gly
294 55 60 65
296 TTT GGA GGT GGT GCT TGT GGA AAC GGT GGT TCA ACA CGA CCA AAT CAA 296
297 Phe Gly Gly Gly Ala Cys Gly Asn Gly Gly Ser Thr Arg Pro Asn Gln
298 70 75 80
300 AAA CAC TGT TAT TGC GAA TAACCATATT CCGGATGAAA GACCAAATTG 344
301 Lys His Cys Tyr Cys Glu

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RAW SEQUENCE LISTING

DATE: 03/29/2007

PATENT APPLICATION: US/10/071,751B

TIME: 15:18:50

Input Set : N:\efs\03_21_07\10071751b_efs\pto.da.txt

Output Set: N:\CRF4\03292007\J071751B.raw

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302      85              90
304      ATATAAATTA CTAAAATTAT GCTAGATAGC AATCATAAAA TTTTGAAGTT TTCAATGATC      404
306      CTAACATGTT TTGCCTCCAA TTTATTTTAA CAGCAAATTG CTGGAACTTA CCGTACCGTA      464
308      ACTAAATGTT CAAGAAATAC TGAATGTTTA CAAATAGATT ATTATAAATA TTGTAACATT      524
310      GTCTAATATT TATAAGAATT ATATAAACTG AATTGCAAAA A      565
313 (2) INFORMATION FOR SEQ ID NO: 12:
315      (i) SEQUENCE CHARACTERISTICS:
316          (A) LENGTH: 90 amino acids
317          (B) TYPE: amino acid
318          (D) TOPOLOGY: linear
320      (ii) MOLECULE TYPE: protein
322      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:
324      Met Lys Phe Leu Leu Ala Ile Cys Val Leu Cys Val Leu Leu Asn Gln
325      1          5          10          15
327      Val Ser Met Ser Lys Met Val Thr Glu Lys Cys Lys Ser Gly Gly Asn
328      20          25          30
330      Asn Pro Ser Thr Glu Glu Val Ser Ile Pro Ser Gly Lys Leu Thr Ile
331      35          40          45
333      Glu Asp Phe Cys Ile Gly Asn His Gln Ser Cys Lys Ile Phe Tyr Lys
334      50          55          60
336      Ser Gln Cys Gly Phe Gly Gly Gly Ala Cys Gly Asn Gly Gly Ser Thr
337      65          70          75          80
339      Arg Pro Asn Gln Lys His Cys Tyr Cys Glu
340      85          90
343 (2) INFORMATION FOR SEQ ID NO: 13:
345      (i) SEQUENCE CHARACTERISTICS:
346          (A) LENGTH: 270 base pairs
347          (B) TYPE: nucleic acid
348          (C) STRANDEDNESS: single
349          (D) TOPOLOGY: linear
351      (ii) MOLECULE TYPE: cDNA
353      (ix) FEATURE:
354          (A) NAME/KEY: CDS
355          (B) LOCATION: 1..270
358      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:
360      ATG AAA TTT TTA CTG GCA ATT TGC GTG TTG TGT GTT TTA TTA AAT CAA      48
361      Met Lys Phe Leu Leu Ala Ile Cys Val Leu Cys Val Leu Leu Asn Gln
362      1          5          10          15
364      GTA TCT ATG TCA AAA ATG GTC ACT GAA AAG TGT AAG TCA GGT GGA AAT      96
365      Val Ser Met Ser Lys Met Val Thr Glu Lys Cys Lys Ser Gly Gly Asn
366      20          25          30
368      AAT CCA AGT ACA GAA GAG GTG TCA ATA CCA TCT GGG AAG CTT ACT ATT      144
369      Asn Pro Ser Thr Glu Glu Val Ser Ile Pro Ser Gly Lys Leu Thr Ile
370      35          40          45
372      GAA GAT TTT TGT ATT GGA AAT CAT CAA AGT TGC AAA ATA TTT TAC AAA      192
373      Glu Asp Phe Cys Ile Gly Asn His Gln Ser Cys Lys Ile Phe Tyr Lys
374      50          55          60
376      AGT CAA TGT GGA TTT GGA GGT GGT GCT TGT GGA AAC GGT GGT TCA ACA      240
377      Ser Gln Cys Gly Phe Gly Gly Gly Ala Cys Gly Asn Gly Gly Ser Thr

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RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/071,751B

DATE: 03/29/2007
TIME: 15:18:51

Input Set : N:\efs\03_21_07\10071751b_efs\pto.da.txt
Output Set: N:\CRF4\03292007\J071751B.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:2; Xaa Pos.5,6
Seq#:4; Xaa Pos.8,9
Seq#:5; Xaa Pos.12,18
Seq#:6; Xaa Pos.5
Seq#:7; Xaa Pos.13,19,21
Seq#:29; Xaa Pos.379
Seq#:30; Xaa Pos.379
Seq#:35; N Pos. 192
Seq#:70; Xaa Pos.1,24

VERIFICATION SUMMARY

DATE: 03/29/2007

PATENT APPLICATION: US/10/071,751B

TIME: 15:18:51

Input Set : N:\efs\03_21_07\10071751b_efs\pto.da.txt

Output Set: N:\CRF4\03292007\J071751B.raw

L:29 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:30 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:82 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:131 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0
L:150 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0
L:153 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:16
L:169 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
L:187 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0
L:190 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:16
L:1625 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29 after pos.:1152
L:1761 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30 after pos.:368
L:3518 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:70 after pos.:0
L:3521 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:70 after pos.:16

**Raw Sequence Listing before editing
(for reference only)**



IFW16

RAW SEQUENCE LISTING

DATE: 03/21/2007

PATENT APPLICATION: US/10/071,751B

TIME: 14:41:14

Input Set : N:\efs\03_21_07\10071751b_efs\2618-17-C4-PUS-2.txt

Output Set: N:\CRF4\03212007\J071751B.raw

SEQUENCE LISTING

W--> 3 The following Sequence Listing is submitted pursuant to
 E--> 5 submitted herewith.
 E--> 7 Applicants assert pursuant to 37 CFR 1.821(f) that the
 E--> 8 content of the paper and computer readable copies of SEQ ID
 E--> 9 NO:1 through SEQ ID NO:88 submitted herewith are the same.

12 (1) GENERAL INFORMATION:

14 (i) APPLICANT: Frank, Glenn R.

15 Wu Hunter, Shirley

16 Wallenfels, Lynda

18 (ii) TITLE OF INVENTION: NOVEL ECTOPARASITE SALIVA PROTEINS AND
 19 APPARATUS TO COLLECT SUCH PROTEINS

21 (iii) NUMBER OF SEQUENCES: 88

23 (iv) CORRESPONDENCE ADDRESS:

24 (A) ADDRESSEE: SHERIDAN ROSS P.C.

25 (B) STREET: 1700 LINCOLN ST., SUITE 3500

26 (C) CITY: DENVER

27 (D) STATE: CO

28 (E) COUNTRY: U.S.A.

29 (F) ZIP: 80203

C--> 31 (v) COMPUTER READABLE FORM:

32 (A) MEDIUM TYPE: Floppy disk

33 (B) COMPUTER: IBM PC compatible

34 (C) OPERATING SYSTEM: PC-DOS/MS-DOS

35 (D) SOFTWARE: PatentIn Release #1.0, Version #1.30

37 (vi) CURRENT APPLICATION DATA:

C--> 38 (A) APPLICATION NUMBER: US/10/071,751B

C--> 39 (B) FILING DATE: 07-Feb-2002

40 (C) CLASSIFICATION:

42 (viii) ATTORNEY/AGENT INFORMATION:

43 (A) NAME: Connell, Gary J.

44 (B) REGISTRATION NUMBER: 32,020

45 (C) REFERENCE/DOCKET NUMBER: 2618-17-C4

47 (ix) TELECOMMUNICATION INFORMATION:

48 (A) TELEPHONE: 303/863-9700

49 (B) TELEFAX: 303/863-0223

Does Not Comply
 Corrected Diskette Needed

ERRORED SEQUENCES

VERIFICATION SUMMARY

DATE: 03/21/2007

PATENT APPLICATION: US/10/071,751B

TIME: 14:41:15

Input Set : N:\efs\03_21_07\10071751b_efs\2618-17-C4-PUS-2.txt

Output Set: N:\CRF4\03212007\J071751B.raw

L:3 M:244 W: Invalid beginning of sequence listing, Data=[The following Sequence Listing is submitted pursuant to], Duplicate Sequence Listing Title!

L:4 M:220 C: Keyword misspelled or invalid format, [(v) COMPUTER READABLE FORM:]

L:5 M:243 E: Alpha Header Field expected, Data=[submitted herewith.], General Header Line Not Processed!

L:7 M:243 E: Alpha Header Field expected, Data=[Applicants assert pursuant to 37 CFR 1.821(f) . that the], General Header Line Not Processed!

L:8 M:243 E: Alpha Header Field expected, Data=[content of the paper and computer readable copies of SEQ ID], General Header Line Not Processed!

L:9 M:243 E: Alpha Header Field expected, Data=[NO:1 through SEQ ID NO:88 submitted herewith are the same.], General Header Line Not Processed!

L:38 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]

L:39 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]

L:91 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0

L:140 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0

L:159 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0

M:341 Repeated in SeqNo=5

L:178 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0

L:196 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0

M:341 Repeated in SeqNo=7

L:1634 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29 after pos.:1152

L:1770 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30 after pos.:368

L:3527 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:70 after pos.:0

M:341 Repeated in SeqNo=70